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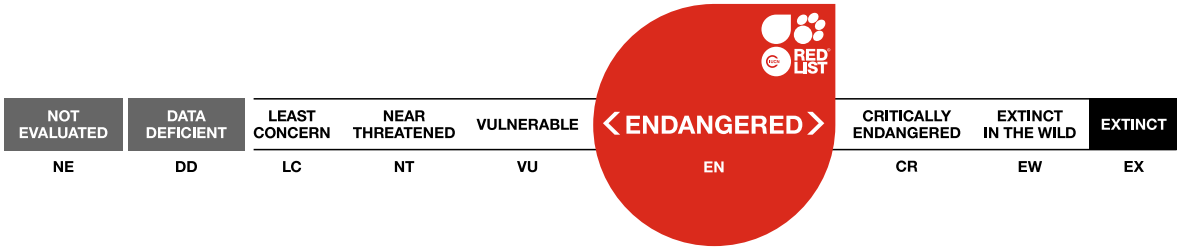
Telatrygon crozieri, Indian Sharpnose Ray

Assessment by: Dulvy, N.K., Bineesh, K.K., Akhilesh, K.V., Derrick, D., Fernando, D., Haque, A.B., Maung, A., Moore, A. & Owfi, F.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Chondrichthyes	Myliobatiformes	Dasyatidae

Scientific Name: *Telatrygon crozieri* (Blyth, 1860)

Synonym(s):

- *Trygon crozieri* Blyth, 1860

Common Name(s):

- English: Indian Sharpnose Ray

Taxonomic Source(s):

Eschmeyer, W.N., Fricke, R. and Van der Laan, R. (eds). 2016. Catalog of Fishes: genera, species, references. Updated 29 September 2016. Available at: http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp. (Accessed: 29 September 2016).

Taxonomic Notes:

Last *et al*. (2016a) resurrected the species *Telatrygon crozieri* (Blythe, 1886) from its former synonymy with *Dasyatis* (=*Telatrygon*) *zugei*.

Assessment Information

Red List Category & Criteria: Endangered A2cd ver 3.1

Year Published: 2021

Date Assessed: May 12, 2020

Justification:

The Indian Sharpnose Ray (*Telatrygon crozieri*) is a small (to 40 cm disc width) ray occurring in the northern Indian Ocean, in India and Bangladesh, and possibly Pakistan. It is demersal on the inner continental shelf from the surface down to a depth of 50 m. It is captured in shrimp trawl and gillnets and rays tend to be targeted by industrial and artisanal fleets. Species-specific data remain limited due to species misidentifications and recent taxonomic changes. Declines in batoids from intense and increasing fishing has been reported for India, Bangladesh, and Pakistan. This species has not been recorded recently on the west coast of India in regular trawl surveys and this historically widely distributed species now has a much narrower distribution. Even on the east coast (Tamil Nadu to West Bengal) of India, few individuals have been encountered and this number has declined during 2010–2018 surveys and the Indian Sharpnose Ray is now only regularly observed in the east coast from Odisha to West Bengal. The entire geographic range of the species is subject to intense and increasing fishing pressure with little refuge at depth. The steep decline in landings of batoids in India, Bangladesh, and Pakistan is consistent with a population reduction of 54–84% over three generation lengths (26 years). Hence, it is suspected that the Indian Sharpnose Ray has undergone a population reduction of 50–79% over the past three generation lengths (26 years) due to levels of exploitation, and it is assessed

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as Endangered A2cd.

Geographic Range

Range Description:

The Indian Sharpnose Ray is found in the northern Indian Ocean in India (Last et al. 2016b). This species was formerly distributed throughout the coastal waters of India but is now not present in the eastern states of Tamil Nadu and Andra Pradesh, and it is still present in Odisha and West Bengal states (K.V. Akhilesh and K.K. Bineesh unpubl. data 2020). This species may also be present in Pakistan based on photographic records (M. Moazzam unpubl. data 2020). The presence of T. cf crozieri has been visually confirmed in Bangladesh but awaiting genetic confirmation (A.B. Haque and K.K. Bineesh unpubl. data 2020). This species is not on any local species checklist for Sri Lanka and has not been recorded in recent landings site surveys (D. Fernanado unpubl. data 2020). This species has not been confirmed from Myanmar (A. Maung unpubl. data 2020).

Country Occurrence:

Native, Extant (resident): Bangladesh; India (Orissa, West Bengal)

Native, Possibly Extant (resident): India (Karnataka)

Native, Possibly Extinct: India (Andhra Pradesh, Goa, Gujarat, Kerala, Maharashtra, Pondicherry, Tamil Nadu)

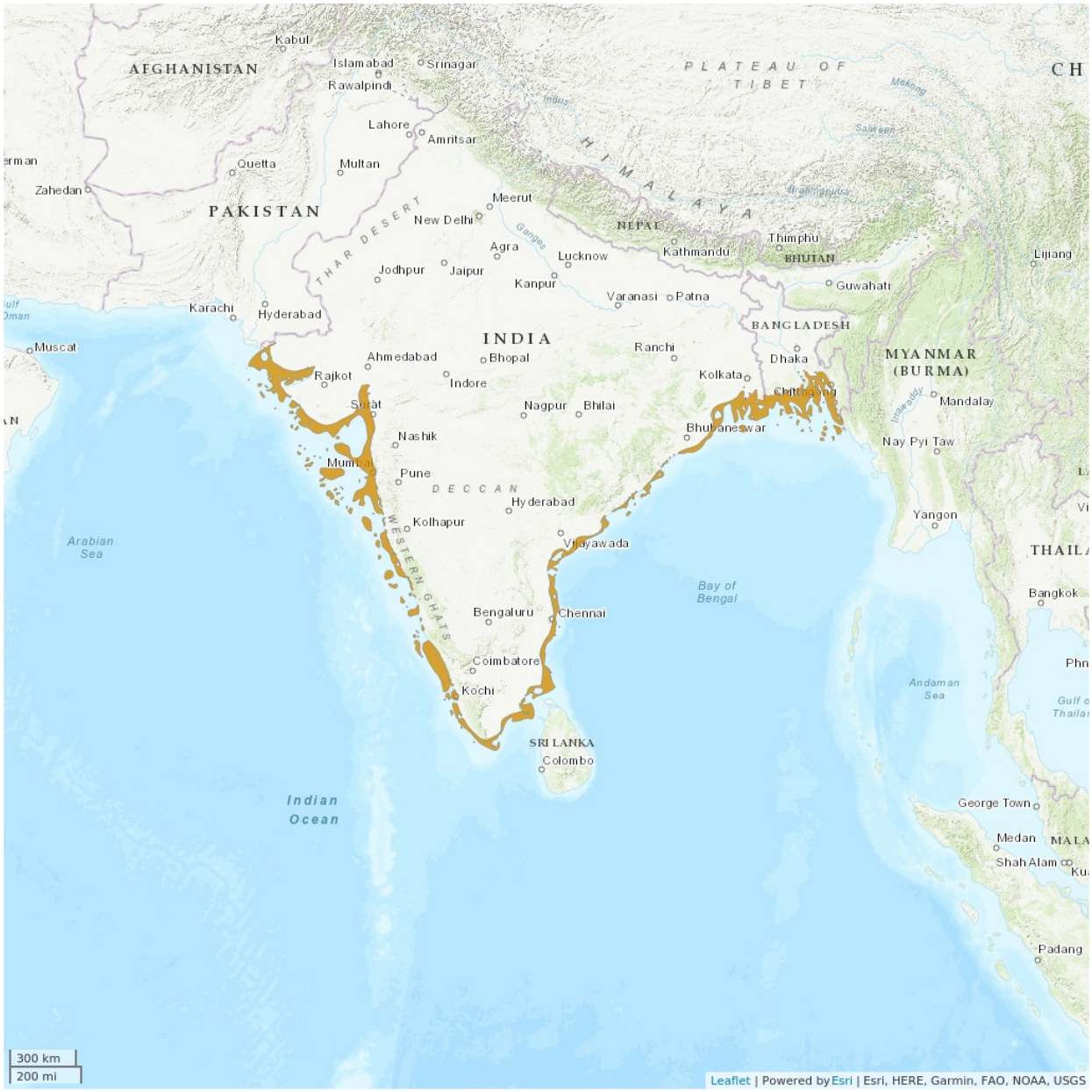
Native, Presence Uncertain: Pakistan

FAO Marine Fishing Areas:

Native: Indian Ocean - western

Native: Indian Ocean - eastern

Distribution Map



Legend

EXTANT (RESIDENT)

Compiled by:

IUCN SSC Shark Specialist Group 2020

The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.

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Population

Trawl surveys in Mumbai, off the west coast of India have recorded this species (as *Dasyatis zugei*) as representing less than 1% of ray landings by weight (Raje and Zacharia 2009). Catches of this species steadily declined from 4.5 t between 1990–1992 to no reported catches in 2002–2004. However, recent changes in the taxonomy of ray species has led to uncertainties in previous data collected and specimens of the Indian Sharpnose Ray may have also been recorded as Bengal Whipray (*Brevitrygon imbricata*), the second most common ray encountered in Indian fisheries which has had steady landings over the period from 1993 to 2004 (Raje and Zacharia 2009, K.V. Akhilesh unpubl. data 16/05/2017). This indicates that it was an abundant species in trawl catches, but still declining considerably due to trawl effort doubling during this period. Indeed, this species has not been recorded in regular trawl surveys in West India since 2008. Bineesh *et al*. (2017) extensively surveyed the southwest coast of India as a part of DNA barcoding study and elasmobranch catch monitoring programme during 2009–2015. However, not a single individual of Indian Sharpnose Ray was recorded from the survey. The recent surveys conducted along the east coast (Tamil Nadu to West Bengal) found few individuals and the number of encounters declined during the 2010–2018 surveys with the current distribution now confined to a small stretch of east coast from Odisha to West Bengal where the species is regularly observed (K.V. Akhilesh and K.K. Bineesh unpubl. data 2020). Intensive fishing by trawlers in shallow depths targeting shrimps and sole fishes catch large numbers of small-sized rays and lead to population reduction of rays (K.K. Bineesh unpubl. data 2020).

Overall declines in batoids from intense and increasing fishing pressure have been reported for India. For example, the annual average catch of rays landed by trawlers at New Ferry Wharf, Mumbai, between 1990–2004 was 502 t. During this period trawler hours doubled, and consequently, the catch rate declined by 60% from 0.65 kg/hr in 1990 to 0.24 kg/hr in 2004 (Raje and Zacharia 2009). Although this information is not species-specific, and the actual proportion of the Indian Sharpnose Ray in the catch in unknown, it provides an indication of batoid declines in India. This level of decline equates to a population reduction of 84% over the three generation lengths (26 years) of the Indian Sharpnose Ray.

In Bangladesh, this species is not very commonly landed, but it is observed throughout the year. Generally, questionnaires of local fishers revealed a steep decline in rays in the past 10 years, including of the smaller rays like the Indian Sharpnose Ray (A.B. Haque unpubl. data 2020). Landing site and elasmobranch processing site surveys revealed increasing numbers of smaller rays being caught and dried for mainly national consumption. Fishers reported that when fishing for larger rays ten years ago, a seven-day trip would yield over 1,000 individuals, whereas recent seven-day fishing trips now only yield 2–5 large ray individuals. This has led to fishers using other net types because of the large decline in ray catches (A.B. Haque unpubl. data 2020). Reconstructed landings data of sharks, skates, and rays in Bangaldesh showed a 34% decline in landings over 15 years from 2000 to 2014. Catches gradually rose from 195 t in 1950 to 7,540 t in 1973 then declined to the 3,500 t in the mid-1980s, then rose steeply to a peak of 10,909 t in 2000 followed by a fluctuating decline to 7,163 t in 2014 (Pauly *et al*. 2020). These declines in landings can be inferred to represent reductions in their populations, as the fishing effort has increased substantially during the period of a decline in landings (Pauly *et al*. 2020). This level of decline equates to a population reduction of 54% over the three generation lengths (26 years) of the Indian Sharpnose Ray.

In Pakistan, the use of bottom-set gillnets targeting rays has almost doubled in the last five years due to

increasing demand for stingray wings in Thailand and Malaysia. Annual landings of rays was reported to be 42,000 t in 1979, 41,230 t in 1980, and 20,780 t in 1999 which reduced to 3,723 t in 2019; landings were mainly from targeted gillnet fisheries and bycatch of other fisheries, primarily trawls (M. Moazzam unpubl. data 2020). This level of decline equates to a population reduction of 79% over the three generation lengths (26 years).

There is a large amount of illegal, unregulated, and unreported (IUU) fishing in the Indo-Pacific region with reported catch estimated to represent only 0.9–19.4% of the true catch (Tull 2014). In some areas, including near marine protected areas (MPAs), IUU catch of sharks was estimated to equal 77% of the reported catch, indicating much higher levels of depletion (Varkey *et al*. 2010).

The entire Indian range of the species is subject to intense and increasing fishing pressure, with little refuge. The landings of rays in India, Bangladesh, and Pakistan infer population reductions of 54–84% over three generation lengths (26 years). Hence, it is suspected that the Indian Sharpnose Ray has undergone a population reduction of 50–79% over the past three generation lengths (26 years) due to levels of exploitation.

Current Population Trend: Decreasing

Habitat and Ecology **(see Appendix for additional information)**

The Indian Sharpnose Ray is demersal on continental and insular shelves down to depths of 50 m, but typically caught at 20–30 m depth (Last et al. 2016b, K.V. Akhilesh and K.K. Bineesh unpubl. data 2020). It reaches a maximum size of 40 cm disc width (DW) or around 120 cm total length; males mature at 28 cm DW and females mature at 30 cm DW (Last et al. 2016b). Reproduction is viviparous with litter sizes of 1–4 pups and size-at-birth is 8 cm DW (Last et al. 2016b). As there is no information on this species' age-at-maturity and maximum age, generation length was inferred as 8.5 years based on data for the similarly sized Plain Maskray (*Neotrygon annotata*) (Jacobsen and Bennett 2010).

Systems: Marine

Use and Trade

The flesh of the Indian Sharpnose Ray is used fresh or salted and dried for human consumption throughout its range (Last *et al*. 2010).

Threats **(see Appendix for additional information)**

The Indian Sharpnose Ray is a small species that was regularly caught as bycatch in trawls and gillnets within its range. Rays tend to be subject to target fisheries in Pakistan, Indian and Bangladesh (K.K. Bineesh and M. Moazzam unpubl. data 2020). The limited geographic distribution of this species overlaps with intense coastal fisheries and the shallow depth distribution means this species is unlikely to have a depth refuge. There are approximately 24,554 trawl vessels operating in the Indian part of the range (CMFRI 2010). Also, there has been a significant increase in coastal fishing effort and power over the past 30 years (approximately three generation lengths). For example, there were about 6,600 trawlers operating in the Indian state of Gujarat in the early 2000s (Zynudheen et al. 2004). This number increased to 11,582 trawlers in 2010 (CMFRI 2010). Furthermore, there are over 13,400 gill netters operating along the west coast, with many other types of net gear also deployed in coastal areas (CMFRI 2010).

Conservation Actions (see Appendix for additional information)

There are no species-specific conservation measures in place. India has a seasonal trawl ban from June 15th to July 31st each year that might benefit this species. To conserve the population and to permit recovery, a suite of measures will be required which may include species protection, spatial management, bycatch mitigation, and harvest and trade management measures (including international trade measures). Effective enforcement of measures will require ongoing training and capacity-building (including in the area of species identification). Research is required on this species' biology, abundance and distribution, and catch monitoring is needed to help understand population trends and inform management and any future conservation needs.

Credits

Assessor(s):	Dulvy, N.K., Bineesh, K.K., Akhilesh, K.V., Derrick, D., Fernando, D., Haque, A.B., Maung, A., Moore, A. & Owfi, F.
Reviewer(s):	Sherman, C.S. & Rigby, C.L.
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Authority/Authorities:	IUCN SSC Shark Specialist Group (sharks and rays)

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Citation

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External Resources

For Supplementary Material, and for Images and External Links to Additional Information, please see the Red List website.

Appendix

Habitats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Habitat	Season	Suitability	Major Importance?
9. Marine Neritic -> 9.4. Marine Neritic - Subtidal Sandy	Resident	Suitable	Yes
9. Marine Neritic -> 9.5. Marine Neritic - Subtidal Sandy-Mud	Resident	Suitable	Yes
9. Marine Neritic -> 9.6. Marine Neritic - Subtidal Muddy	Resident	Suitable	Yes
9. Marine Neritic -> 9.10. Marine Neritic - Estuaries	Resident	Suitable	Yes
12. Marine Intertidal -> 12.2. Marine Intertidal - Sandy Shoreline and/or Beaches, Sand Bars, Spits, Etc	Resident	Suitable	Yes
12. Marine Intertidal -> 12.4. Marine Intertidal - Mud Flats and Salt Flats	Resident	Suitable	Yes

Use and Trade

(http://www.iucnredlist.org/technical-documents/classification-schemes)

End Use	Local	National	International
Food - human	Yes	Yes	No

Threats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Threat	Timing	Scope	Severity	Impact Score
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.1. Intentional use: (subsistence/small scale) [harvest]	Ongoing	Whole (>90%)	Slow, significant declines	Medium impact: 7
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.2. Intentional use: (large scale) [harvest]	Ongoing	Whole (>90%)	Slow, significant declines	Medium impact: 7
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.3. Unintentional effects: (subsistence/small scale) [harvest]	Ongoing	Whole (>90%)	Slow, significant declines	Medium impact: 7
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.4. Unintentional effects: (large scale) [harvest]	Ongoing	Whole (>90%)	Slow, significant declines	Medium impact: 7
	Stresses:	2. Species Stresses -> 2.1. Species mortality		

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Conservation Actions in Place

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Action in Place
In-place research and monitoring
Action Recovery Plan: No
Systematic monitoring scheme: No
In-place land/water protection
Conservation sites identified: No
Area based regional management plan: No
Occurs in at least one protected area: Unknown
Invasive species control or prevention: Not Applicable
In-place species management
Harvest management plan: No
Successfully reintroduced or introduced benignly: No
Subject to ex-situ conservation: No
In-place education
Subject to recent education and awareness programmes: No
Included in international legislation: No
Subject to any international management / trade controls: No

Conservation Actions Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Action Needed
1. Land/water protection -> 1.1. Site/area protection
3. Species management -> 3.1. Species management -> 3.1.1. Harvest management
3. Species management -> 3.1. Species management -> 3.1.2. Trade management
3. Species management -> 3.2. Species recovery
5. Law & policy -> 5.1. Legislation -> 5.1.2. National level
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.2. National level

Research Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

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Research Needed
1. Research -> 1.1. Taxonomy
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
1. Research -> 1.4. Harvest, use & livelihoods
2. Conservation Planning -> 2.1. Species Action/Recovery Plan
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.2. Harvest level trends

Additional Data Fields

Distribution
Continuing decline in area of occupancy (AOO): Yes
Continuing decline in extent of occurrence (EOO): Yes
Lower depth limit (m): 50
Upper depth limit (m): 0
Habitats and Ecology
Generation Length (years): 8.5

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